

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REQUIREMENTS:

1. GENERAL:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-B-70327.
- SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS AS CONTAINED IN ND 1015404, CLASS 3.
- PREPARATION FOR DELIVERY SHALL BE IN ACCORDANCE WITH MIL-C-12000. WIRE SHALL BE COILED AND FURNISHED IN A BARREL PACK. THE BARREL DIAMETER SHALL BE 20 INCHES AND THE MINIMUM DIAMETER OF THE COIL SHALL BE 12 INCHES.
 - CONTAINER (BARREL) SHALL BE MARKED IN ACCORDANCE WITH MIL-C-12000 WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, LOT OR SERIAL NUMBER, DATE OF MANUFACTURE OR CODING, NASA DRAWING NUMBER, REVISION LETTER, AND DASH NUMBER, QUANTITY ENCLOSED AND THE PRECAUTIONARY WORDS "FRAGILE", "THIS END UP" AND "DO NOT DROP OR ROLL".

2. ACCEPTANCE AND INSPECTION:

A. MECHANICAL REQUIREMENTS:

- INSULATION: COLOR PER TABLE 1.
- DIAMETER OF CONDUCTOR: $0.010 \text{ INCH} \pm 0.0003$, -0.0001 INCH .
- DIAMETER OVER INSULATION: 0.021 INCH , $\pm 0.0015 \text{ INCH}$.
- MINIMUM CONTINUOUS LENGTH: 500 FEET.
- FLAMMABILITY: INSULATION SHALL NOT SUPPORT COMBUSTION.
- STRIP FORCE: THE INSULATION PULL-OFF FORCE FOR A 3 INCH STRIP SHALL BE 8 OUNCES MINIMUM, 3 POUNDS MAXIMUM.

B. ELECTRICAL CHARACTERISTICS: AT $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$.

- DC RESISTANCE: 115 OHMS MAXIMUM PER 1000 FEET.
- VOLTAGE RATING: 600 VOLTS PEAK.
- DIELECTRIC STRENGTH: 1500 VOLTS RMS, MINIMUM AFTER 4 HOURS IN WATER 25°C PLUS OR MINUS 5°C .
- INSULATION RESISTANCE: 12500 MEGOHMS MINIMUM PER 1000 FEET AFTER 4 HOURS IN WATER 25°C PLUS OR MINUS 5°C .

C. VENDOR SUPPLIED DATA: EACH SHIPMENT OF WIRE SHALL BE ACCOMPANIED BY THE FOLLOWING DOCUMENTATION.

- CERTIFICATE OF COMPLIANCE WITH DESIGN REQUIREMENTS.

PROCURE ONLY FROM APPROVED SOURCES LISTED IN ND 1002034 FOR THIS DRAWING.

3. DESIGN:

- OPERATING TEMPERATURE: 130°C MAXIMUM.
- TENSILE STRENGTH: 33,000 POUNDS PER SQUARE INCH MINIMUM, 42,000 PSI MAXIMUM.
- ELONGATION: 12 PERCENT MINIMUM, 25 PERCENT MAXIMUM.
- SPLICES: SPLICES OF THE CONDUCTOR SHALL BE ELECTRO-WELDED BEFORE FINAL PACKAGING AND SHALL BE OF THE BUTT TYPE. 2" ON EITHER SIDE OF SPICE SHALL BE STRIPPED OF INSULATION.
- DIELECTRIC CONSTANT: 3.3 MAXIMUM AT 1 MC AND 77°F .
- CONCENTRICITY: AT ANY CROSS SECTION ALONG THE LENGTH OF THE COMPLETED WIRE THE MINIMUM THICKNESS OF THE INSULATION SHALL NOT BE LESS THAN 41 PERCENT OF THE DIFFERENCE BETWEEN THE MEASURED DIAMETER OVER THE INSULATION AND THE MEASURED DIAMETER OVER THE CONDUCTOR, OR NOT LESS THAN 70 PERCENT OF THE MAXIMUM THICKNESS AT THAT CROSS-SECTION.
- HEAT RESISTANCE: INSULATION SHALL WITHSTAND 1500 VOLTS MINIMUM AFTER 96 HOURS AT 150°C .
- COLD BEND: INSULATION SHALL WITHSTAND 1500 VOLTS MINIMUM AFTER 4 HOURS AT -65°C AND BENT AROUND A 1/2 INCH DIAMETER MANDREL.
- INSULATION CUT-THROUGH: AT A TEMPERATURE OF 50°C THE INSULATION SHALL RESIST THE PENETRATION OF A METAL BLADE $0.003 \text{ INCH} \pm 0.0002 \text{ INCH}$ THICK WITH 750 GRAMS APPLIED AT THE POINT OF CONTACT FOR 24 HOURS. THERE SHALL BE NO ELECTRICAL CONTINUITY BETWEEN THE BLADE AND THE CONDUCTOR WHEN A POTENTIAL OF 500 VOLTS RMS IS APPLIED.
- MINIMUM CURL OF WIRE: WHEN A 30 INCH LENGTH OF WIRE IS CUT FROM A BARREL, THE WIRE, WHEN LYING UNRESTRAINED ON A SMOOTH, FLAT SURFACE, SHALL NOT CURL UP TO A DIAMETER OF LESS THAN 10 INCHES WITHIN ONE MINUTE AT AMBIENT TEMPERATURES.
- SPARK TEST: 12000 VOLTS RMS.
- MATERIAL OF CONDUCTOR: SOLID, OXYGEN FREE HIGH CONDUCTIVITY, COPPER, CERTIFIED GRADE, REF ASTM-B-170 SILVER PLATED 40 MICROINCHES MINIMUM, 80 MICROINCHES MAXIMUM.
- WORKMANSHIP: THE SURFACE OF THE FINISHED WIRE SHALL BE CLEAN, SMOOTH, FREE FROM FOREIGN RESIDUE AND FREE FROM VISIBLE BLEMISHES. THERE SHALL BE NO IMPERFECTIONS WHICH INCREASE THE OVERALL DIAMETER SO AS TO EXCEED THE MAXIMUM SPECIFIED. THE INSULATION SHALL BE UNIFORM THROUGHOUT AND FREE FROM ANY DEFECTS SUCH AS INCLUSIONS, RADIAL CRACKS, PINHOLES, DISCOLORATION OF CONDUCTOR OR INSULATION WHICH MAY AFFECT ITS SERVICEABILITY OR REQUIRE SPECIAL HANDLING.

P. MATERIAL IS A POLYSULFONE

R. INTENDED USE: MATERIAL WILL BE USED AS A WIRE-WRAP WIRE IN POTTED ASSEMBLIES

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		MATERIAL
NEXT ASSY	USED ON	SEE NOTE
APPLICATION		

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
		INITIAL RELEASE CLASS A PER TDRR 27407			3-22-66	<i>[Signature]</i>

TABLE I

DASH NO.	COLOR
-001	WHITE
-002	RED
-003	BLUE
-004	YELLOW

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>H. Wong</i> DMS	21 Sep 65	WIRE, ELECTRICAL, INSULATED, SOLID SPECIFICATION CONTROL DRAWING		
CHECKED <i>[Signature]</i> WMS	22 Sep 65			
APPROVED <i>[Signature]</i> WMS	21 Mar 66			
APPROVED <i>[Signature]</i> CHW	30 Mar 66			
APPROVED MIT <i>[Signature]</i> WMS	21 Mar 66	CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED MSC <i>[Signature]</i>		80230	C	1006376
DATE	SCALE NONE	SHEET 1 OF 1		